

**GRANT-PLATTE RIVERS
STATE OF THE BASIN REPORT**

VOLUME 2

**ROUNTREE BRANCH WATERSHED
(Sub-watershed of the Little Platte River Watershed)**

TABLE OF CONTENTS

Rountree Branch Watershed Narrative

GRANT-PLATTE RIVERS	1
STATE OF THE BASIN REPORT	1
VOLUME 2.....	1
ROUNTREE BRANCH WATERSHED.....	1
BACKGROUND INFORMATION ON ROUNTREE BRANCH.....	4
LOCATION AND CHARACTER OF THE STREAM	4
TOPOGRAPHY AND GEOLOGY	4
ORIGINAL VEGETATION AND CURRENT LANDUSE.....	4
CURRENT ACTIVITIES IN ROUNTREE BRANCH	5
RECOMMENDATIONS FOR THE ROUNTREE BRANCH SUB-WATERSHED.....	10
INFORMATION AND EDUCATION	10
NON-POINT SOURCE POLLUTION	10
PROTECTING AND IMPROVING WATER QUALITY AND IN-STREAM HABITAT	10
OUTDOOR RECREATION, WILDLIFE HABITAT AND PROTECTING OPEN SPACE AND FARMLAND	11
ROUNTREE BRANCH WATER QUALITY	12
PAST AND PRESENT HEALTH OF FISHERY	12
MONITORING CONDUCTED ON ROUNTREE BRANCH.....	12
1978 and 1983 – Early Monitoring Efforts	13
1995 - Data Collected by Students at UW-Platteville for the Badger Wetland Specialists.....	13
1998 – Biomonitoring Tests Conducted by the State Lab of Hygiene	14
1999 – Early Spring Data Collected by a University of Wisconsin-Platteville Water Analysis Class.....	14
1999 – Summer Data Collected by a Trout Unlimited Intern	14
1999 – Winter Data Collected by Students from St. Mary School in Platteville	15
2000 – Summer Data Collected by Max Anderson and UW-Platteville Students	15
2000 – Summer Baseline Data Collected by the Wisconsin DNR.....	15
2000 – Late Summer and Fall Fecal Coliform and Fecal Streptococcus Samples	16
2000 – Cold Water Habitat Evaluation.....	16
PLANS FOR FUTURE MONITORING	16
The Wisconsin DNR	17
University of Wisconsin-Platteville	17
Friends of Rountree Branch (FORB)	17
IN-STREAM AND STREAMBANK HABITAT IMPROVEMENTS.....	20
POTENTIAL THREATS TO SURFACE WATER QUALITY	20
NON-POINT SOURCE POLLUTION.....	21
Urbanization and Stormwater.....	21
Agriculture and Forestry.....	21
Abandoned Mines and Heavy Metals	22
POINT SOURCE PERMITS	23
Swiss Valley Farms	23
Municipal Discharges	24
THREATS TO GROUNDWATER AND DRINKING WATER RESOURCES.....	24

LAND AND WILDLIFE RESOURCES	25
PUBLIC LAND AND RECREATIONAL OPPORTUNITIES	25
<i>City Parks</i>	25
<i>State Land</i>	25
<i>University Land</i>	25
<i>Camping</i>	25
<i>Trails</i>	25
<i>Forestry in the Watershed</i>	25
<i>Hunting</i>	26
<i>Boating</i>	26
<i>Fishing</i>	26
WILDLIFE MANAGEMENT	26
NATURAL HERITAGE INVENTORY	26
WHERE DO WE GO FROM HERE?	27
OUTREACH, EDUCATION AND INFORMATION	27
APPENDIX A: KEY STAKEHOLDERS	28
APPENDIX B: FISH SHOCKING RECORDS	31
REFERENCES.....	35

BACKGROUND INFORMATION ON ROUNTREE BRANCH

Location and Character of the Stream

The Rountree Branch sub-watershed is 13 square miles and located in the Little Platte River Watershed of the Grant-Platte River Basin. The 18-mile Rountree Branch is a seepage and spring fed stream that begins in western Lafayette County and flows westerly through the city of Platteville to the Little Platte River, an Exceptional Resource Water (ERW). Rountree Branch was named for Colonel John Rountree, (1805 – 1890). Colonel Rountree moved to the area now known as Platteville in 1827 from Mammoth Cave, Kentucky. He was the first permanent settler of Platteville and was integral in the development of the city. Colonel Rountree served on both the territorial and state legislatures. He was on the University of Wisconsin's board of regents and served as vice-president of the State Historical Society from 1849-1888 (47).

Rountree Branch is well known as a small-mouth bass nursery for the Little Platte River, a valuable smallmouth bass fishery. Although the majority of the Grant-Platte River Basin is agricultural, the Rountree Branch is urban influenced. Rountree Branch's headwaters begin in cropland a few miles outside of the City of Platteville. The stream then flows west along the east and south edges of the city to the Little Platte River. As it flows through the city, the stream travels past Moundview Park and follows Valley Road along the south and southwest edges of the city and past the UW-Platteville campus. Valley Road is lined with industrial, extractive and food processing industries. Businesses along this road include a rock quarry, a cement plant, a fertilizer storage company, and a diesel/fuel storage facility (See Map 1).

Topography and Geology

The Grant-Platte River Basin is located entirely within the driftless region of Wisconsin. The terrain ranges from gently to moderately rolling and is well dissected by numerous streams. The Little Platte Watershed's topography, in which Rountree Branch is located, is rolling and streams are incised in steep-sided valleys. This hilly topography and Rountree Branch's location within an urban setting makes it highly susceptible to flash flooding.

The Rountree Branch Watershed is primarily underlain by the Galena and Platteville dolomites of the Middle Ordovician age. The dominant soil type around the stream is moderately to severely eroded silt loams (13). Soil loss in the Little Platte Watershed, as in most unglaciated watersheds, is a problem. Average annual soil loss in the Little Platte Watershed has been estimated at 7.5 tons per acre per year (6). This area is located in the main section of the Upper Mississippi Valley zinc-lead district. This district has been producing zinc and lead for mining purposes for approximately 285 years, longer than any other district in the United States (33).

Original Vegetation and Current Landuse

The Rountree Branch Watershed is located in the Southwest Uplands ecoregion (38). Original vegetation in the Rountree Branch Watershed consisted of oak openings, (oak savannas), with white, black and bur oak, mixed with prairie, or grassland areas (See Map 2). This plant community, however, has practically disappeared as a result of clearing for agricultural use and fire suppression. Although small woodlots and prairies reminiscent of the original vegetation exist today, much of the Rountree Branch watershed has been converted for agricultural purposes in the headwaters area and south of the stream while the north and west portions of the watershed have been developed for residential and commercial land uses (See Map 3). Agricultural activities include a mixture of dairying and cash cropping, but cash grain operations are the dominant agricultural landuse. Cultivation occurs on the ridgetops and on valley floors while grazing usually occurs adjacent to the stream (6). The most dominant cash crops grown in this watershed are corn and soybeans. The steeper valley slopes are left in woodlots. As with the other watersheds in the basin, the number of farms have been decreasing while the average size of farms are increasing (6). Some segments of land adjacent to the stream are currently enrolled in the Conservation Reserve Program.

CURRENT ACTIVITIES IN ROUNTREE BRANCH

There are numerous groups, agencies and private citizens who have taken an interest in the Rountree Branch watershed. All of these key stakeholders have a common goal; to improve the health of Rountree Branch and its surrounding watershed. With this goal in mind, many of these groups have been working to take action to make a difference in the Rountree Branch watershed. For a list of all the stakeholders and information on how to contact them, see Appendix A.

The Friends of Rountree Branch, (FORB), is an ad hoc Committee of the Park and Recreation Board of the City of Platteville and is comprised of interested citizens dedicated to the improvement of the Rountree Branch for recreational and water resource purposes. The group, in partnership with the ***Southwest Badger Resource Conservation and Development District (Southwest Badger RC&D)***, has received a grant from the ***Wisconsin DNR*** to help them formalize their group and develop a plan to take further action in the improvement and restoration of the watershed. The group is looking at the possibility of maintaining the stream as a cold water fishery capable of supporting brown trout. The group hopes to purchase some fishing easements from local landowners to increase public access to the stream. In addition to stream restoration and improvement work, the group has also started to build a walking/biking trail along the stream. The goal is to connect this trail with the state owned Pecatonica State Trail.

Monitoring is an important aspect to the restoration and protection of the Rountree Branch. The ***University of Wisconsin-Platteville, FORB***, and the ***DNR*** have been and will continue to conduct water quality monitoring and aquatic habitat assessment on Rountree Branch. In addition, the DNR has plans to locate the stormwater outfalls to identify where pollutants are entering Rountree Branch.

With support from the ***DNR, the University of Wisconsin-Platteville, the United States Geologic Service*** and the ***City of Platteville*** a stream gaging station will hopefully be built on the stream. The City of Platteville has applied for a Water Quality Planning Grant and hope to construct the station in 2001. If funded, the station will gather stream flow measurements and the analysis of non-point pollution from agricultural and stormwater runoff flows. The station will also collect water chemistry data. The station will be maintained by the University.

The ***University of Wisconsin-Platteville*** and ***Southwest Badger RC&D*** are looking at the potential to model phosphorus loading and sediment delivery from the watershed to Rountree Branch. This type of modeling could prove very useful in developing a long range plan to deal with problems in the watershed (50).

New development and growth directly impact much of Rountree Branch. Although the stream is highly influenced by urban land uses, a large portion of the watershed is rural in nature. In a direct mail survey conducted by the Town of Platteville, residents responded that they were concerned about maintaining the rural and small town character of the area. Although Platteville has seen slow growth over the past decade, any amount of future growth may impact the rural character of the Town and the water quality of Rountree Branch. The ***Town and the City of Platteville*** have been working together to develop a new landuse plan as required by the recently passed ***Smart Growth Legislation*** (44). The new plan will attempt to meet the requirements of the new legislation while protecting Rountree Branch and maintaining the rural character of the Town and the needs of the urban community.

In addition to planning for new growth, the ***City of Platteville*** has done much to improve the quality of the stream. The city's wastewater treatment plant treats over 1 million gallons of wastewater a day. Although this wastewater is discharged to Rountree Branch, the city has employed very high standards to treat this wastewater. In addition, the city has received a Water Quality Planning grant from the DNR to complete a sewer service area (SSA) plan as a part of their Smart Growth Planning.

The city has also recently developed and instituted a Construction Site Erosion Control Ordinance which should help to reduce the threat construction site erosion poses to the stream. The City does not yet have a stormwater ordinance, however, they have begun to look at stormwater planning. The City has been in the process of conducting stormwater management planning for the new industrial park expansion and plan to continue to address the issue of stormwater management. Through efforts to address problems with stormwater, wastewater and erosion control, the city will be a very important part of the solution to the problems within the stream itself.

Map 1 – GENERAL MAP

Map 2 – ORIGINAL VEGETATION

MAP 3 -WISCLAND

RECOMMENDATIONS FOR THE ROUNTREE BRANCH SUB-WATERSHED

Information and Education

- ◆ Develop a Rountree Watershed Website as a forum for project information and other ideas. Use the website as a way to increase communication, data sharing and cooperation between watershed partners.
- ◆ Develop newsletters, workshops, conferences, web sites and fieldtrips as part of an environmental awareness program to educate students (K-12) and adults Rountree Branch Watershed and watershed ecology in general.
- ◆ Increase information and education efforts to promote best management practices and soil conservation.

Non-point Source Pollution

- ◆ The DNR should work with Grant County Land Conservation Department (LCD), Natural Resources Conservation Service and other local, state and federal agencies should investigate and pursue sources of funding for project implementation and installation of best management practices in the watershed such as the Targeted Runoff Management (TRM) program or EQIP program.
- ◆ Install best management practices on barnyards and woodlots that drain to the stream with a specific focus on the headwaters of Rountree Branch to reduce non-point source pollution and in-stream sedimentation.
- ◆ The DNR should work closely with the Wisconsin Department of Transportation staff, Southwestern Wisconsin Regional Planning Commission, and with Grant County LCD staff on the review of erosion control measures associated with the reconstruction of US Highway 151 to assure maximum protection of Rountree Branch.
- ◆ The City of Platteville should complete a sewer system evaluation survey (SSES).
- ◆ The City of Platteville should complete a sewer service area plan (SSA).
- ◆ The City of Platteville should complete a stormwater management plan.

Protecting and Improving Water Quality and In-Stream Habitat

- ◆ The DNR should work with the Grant County LCD and the local Natural Resources Conservation Service to identify critical reaches, as opportunities arise, for riparian corridor buffers, stream bank protection and instream habitat improvement to improve water quality and instream habitat while enhancing the fishery of **Rountree Branch** and its tributaries.
- ◆ The DNR should add Rountree Branch to the 303(d) list of impaired waters.
- ◆ Swiss Valley Farms should consider assessing the feasibility of converting a small ice pond to a wetland for potential discharge.
- ◆ Swiss Valley Farms should consider assessing the feasibility of re-oxygenating potential discharge before release to Rountree Branch.
- ◆ The DNR, in partnership with the University of Wisconsin-Platteville, the FORB and other stakeholders, should establish a stream gauging station on Rountree Branch to gather continuous physical and chemical flow data.

- ◆ Agencies and other partners in the Rountree Branch Watershed should investigate the morphological characteristics of Rountree Branch.
- ◆ All stream monitors from the University of Wisconsin-Platteville, the DNR, FORB, and other organizations who collect data on the stream should record time of day, water temperature and air temperature with all data samples.

Outdoor Recreation, Wildlife Habitat and Protecting Open Space and Farmland

- ◆ All partners should identify areas in the watershed critical to the completion of the Pecatonica State Trail.
- ◆ The City of Platteville and the University of Wisconsin-Platteville should increase public access to the stream and recreational opportunities in the watershed through the purchase of land or easements along the stream if land becomes available.
- ◆ The DNR, the University of Wisconsin-Platteville, the FORB, Grant County, the City of Platteville, and other stakeholders should conduct in-stream habitat work to improve the health of smallmouth bass and brown trout fisheries to increase opportunities for anglers both on the Rountree Branch and the Little Platte River.
- ◆ The DNR, Natural Resources Conservation Service, and Grant and Lafayette Counties should increase the enrollment of eligible land in the Conservation Reserve Program.
- ◆ Stakeholders should collect information on wildlife and wildlife management in the watershed to identify management needs.

ROUNTREE BRANCH WATER QUALITY

In order to determine the health of a river, stream or lake, a variety of physical and chemical parameters are typically measured and observed. Physical measurements such as water temperature, and dissolved oxygen content are very important to the health and abundance of aquatic organisms. Stream flows are critical to sustaining aquatic life and also in transporting pollutants such as sediments and nutrients. The substrate of the stream or river bed as well as the riparian habitat conditions, such as the amount of woody or grassy vegetation along the bank, also play an important role in determining the health of the waterbody. Chemical parameters include conductivity, alkalinity, hardness, pH, nutrients, coliform bacteria, heavy metals and toxins. Aquatic macroinvertebrate, invertebrate biotic indexes, and fish assemblages can indicate water quality by their presence or their absence from the stream. By measuring all of these aspects of a stream consistently, these parameters can provide a good performance measure of the stream's health. Unfortunately, water quality monitoring on Rountree Branch has been done infrequently and inconsistently over the past few decades. Although some data has been collected, it has not measured all of the above parameters in any consistent manner making accurate assessments difficult.

Past and Present Health of Fishery

Historically, Rountree Branch was considered to have no fisheries value due to pollution from various sources in and near Platteville. Since the 1960's however, the stream's health has improved.

In May of 1985, temperature and dissolved oxygen levels indicated the potential for trout survival in Rountree Branch. As a result of this indication, the Wisconsin DNR and the Harry Nohr Chapter of Trout Unlimited stocked 57 yearling brown trout and 43 yearling brook trout in Rountree Branch. The brown trout were taken from Strutt Creek, Iowa County, and the brook trout were from Harker Creek, Iowa County. The fish were stocked just above CTH "B" in the City of Platteville (20). In April of 1991, the Wisconsin DNR stocked approximately 120 brown trout in Rountree Branch. The fish came from the Lancaster Coop. pond. Roughly 50 fish were stocked just north of the old railroad bridge on the east side of Platteville and 70 were placed on the University of Wisconsin-Platteville campus just above and below Southwest Road (21). In October of 1991, 350 brown trout fingerlings from Rullands Coulee Creek were stocked in Rountree Branch (43). The fish were stocked above and below the CTH "B" crossing. The brook trout stocked in 1985 were not able to establish a naturally reproducing population have not been stocked in Rountree Branch since. An unknown percentage of brown trout, however, were able to survive from year to year. In fact, surveys have found yearling trout, an indication that some of the stocked fish have been able not only to survive, but also to reproduce in Rountree Branch.

Today the stream is classified as a warm water sport fishery, (WWSF). Although Rountree Branch is still considered a smallmouth bass fishery in its lower reaches, environmental conditions for smallmouth bass spawning have been poor since 1994 (43). In a survey conducted in the summer of 2000, only six smallmouth bass were found. Despite it's decline as a smallmouth nursery, part of the stream, from its headwaters to just below Southwest road, contains brown trout. Trout have been caught on the UW-Platteville campus down to the treatment plant and 100 yards above and below the Cheese Factory. A 1997 electro-shocking survey revealed five different age classes and spawning beds have been spotted as far down stream as the Highway 80-81 bridge (3). Some records have shown that the stream has been able to support holdover trout from one year to the next since 1985 (43). In a summer 2000 survey, four young of the year brown trout, (evidence of a naturally reproducing population), were found near Moundview Park (43). The State is investigating the possibility of re-classifying the portion of the stream from Southwest Road and up as a Class II Trout stream. This classification would upgrade the current classification of WWSF. The portion below Southwest Road to the Little Platte River would remain as WWSF.

Monitoring Conducted on Rountree Branch

1978 and 1983 – Early Monitoring Efforts

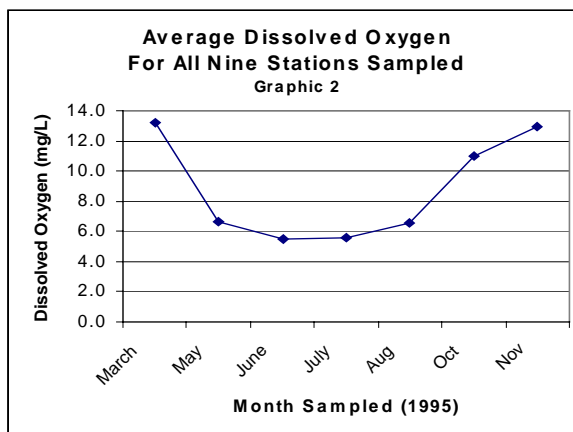
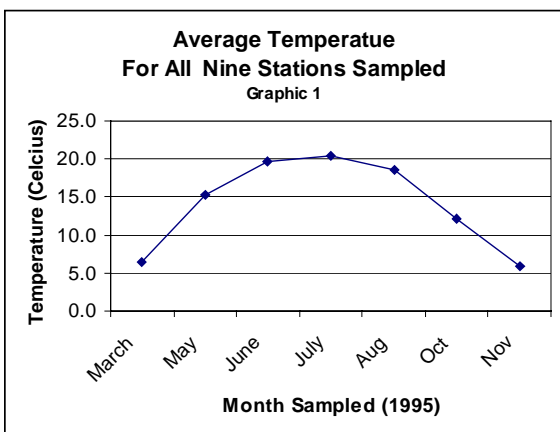
Early data collected in April of 1978 indicated that dissolved oxygen in the stream ranged from between 7 and 11 parts per million (ppm) and temperature fluctuated between 15.6°C (60°F) and 19°C (66°F). Students at the Platteville High School collected temperature data in June and July of 1983 at a site just east of the school. Morning temperatures fluctuated between 14°C (57°F) and 19°C (66°F) while temperatures climbed up to 24°C (75°F) in the afternoon (23).

1995 - Data Collected by Students at UW-Platteville for the Badger Wetland Specialists

In 1995 a civil engineering class at the University of Wisconsin-Platteville conducted extensive monitoring for the Rountree Branch Water Quality Study prepared by the Badger Wetland Specialists. Data was collected from March until November at nine separate sampling locations along Rountree (10). Stations 1 and 2 were upstream from Moundview Park, Station 3 was near the park, Stations 4 and 5 were between Moundview Park and Mineral Street, Station 6 was near Mineral Street, Station 7 was near Valley Road and Highway 151, Station 8 was between S. Chestnut Street and Highway 151 and Station 9 was below the wastewater treatment plant. The parameters monitored included water temperature, dissolved oxygen (mg/L), pH, alkalinity (based upon bicarbonate concentration), and water hardness (based upon the presence of calcium and magnesium). Results of the surveys follow.

Temperature and Dissolved Oxygen (1995)

Temperature and dissolved oxygen patterns monitored in 1995 were consistent through all nine stations (time of day unknown). As depicted in Graphic 1, temperature values at all nine stations rose gradually through late winter and early spring. Stations typically had summer temperatures of 15°C to 20°C (59°F to 68°F) with spikes in late July around 22°C to 24°C (72°F to 75°F). Highest average summer temperatures were at Stations 7 through 9, with temperatures that averaged between 20°C and 22°C (68°F to 72°F). Trout streams require temperatures below 24°C (75°F), while warm water fish can survive in temperatures around 28°C (82°F). The dissolved oxygen decreased steadily throughout the spring and summer, see Graphic 2. Dissolved oxygen levels should be at or above 6mg/L although fish can survive on less for short periods of time (42).



pH (1995)

The pH in Rountree Branch averaged 8 standard units (s.u.). The highest pH readings at all stations were recorded in November and ranged between 8.0 and 9.2 s.u. A pH range of 6.5 to 9.0 has been determined to be the optimal range to support aquatic life (10). Average pH in Grant County streams is around 7.8 s.u. (39).

Alkalinity (1995)

Alkalinity, the measure of the ability of water to neutralize acid, averaged around 259 mg/L at all stations. Typical alkalinity is between 20 and 200 mg/L and alkalinity in Grant County streams is typically 268 mg/L (39). High alkalinity in Rountree Branch may help to neutralize the acidic runoff from nearby roaster piles (10). Bicarbonate levels were roughly 300 – 325 mg/L during the early summer months and dropped to between 100 – 200 mg/L during late summer through November. This could be due to the decrease in spring runoff since runoff has been known to contribute bicarbonate ions to the water.

Hardness (1995)

Hardness of water in Rountree Branch is a combined measurement of the calcium and magnesium concentrations. Moderate hardness is determined to be between 60 and 120 mg/L. On average, Rountree Branch had hardness values between 420 and 530 mg/L. Other southwestern streams typically have hardness values of 300 mg/L. High water hardness can have benefits, however, since metals toxicity is inversely related to water hardness. Rountree Branch's high hardness could help protect aquatic life from metal toxicity as would some stream colloidal or suspended solids, making metals less bioavailable to aquatic organisms.

1998 – Biomonitoring Tests Conducted by the State Lab of Hygiene

State Laboratory of Hygiene (SLOH) biomonitoring tests done in 1998 showed that water samples taken from Rountree Branch were chronically toxic to *Ceriodaphnia dubia*, a small aquatic organism (25). Although not certain of the cause of the toxicity, SLOH reported that the most likely source of the toxicity was due to metals (14). Elevated zinc levels in the water column have been detected in some monitoring done in 1996 at one location on the stream (7).

1999 – Early Spring Data Collected by a University of Wisconsin-Platteville Water Analysis Class

In 1999, a University of Wisconsin-Platteville Water Analysis class analyzed some chemical and physical parameters of Rountree Branch. The flow of the stream (at Mineral Street) is approximately 4.5 cfs, or 2,021 gallons per minute (5). The pH of the stream ranged from approximately 7.3 to 8.6, the temperature in winter was between 2.6°C and 12.8°C (37°F and 55°F). Summer monitoring, conducted by Trout Unlimited, found an average temperature of approximately 18°C (64°F). Dissolved oxygen levels are high, but can experience extreme swings (1). The water in Rountree Branch is very hard with a high alkalinity. The hardness of the water in Rountree Branch is higher than the level of hardness in the groundwater in the area. The results for conductivity and dissolved solids have indicated that minerals and dissolved solids are entering the stream between Moundview Park and Highway 80/81. Other tests conducted by the class found a very low BOD in the stream and the presence of some organisms intolerant to pollution. The overall results of the tests conducted by the class determined the stream to be of good water quality. These results, however, are contrary to the results found by SLOH. One possible reason for the discrepancy between the Water Analysis Class's data and the impaired nature of the stream may be partially attributed to the time of year the observations were made since the class conducted observations during the winter months when run-off was minimal due to the frozen ground and limited agricultural activity (9).

1999 – Summer Data Collected by a Trout Unlimited Intern

In 1999, an intern from Trout Unlimited did some summer monitoring on Rountree Branch. Average pH, temperature and dissolved oxygen measurements were taken on the UW-Platteville campus. The pH at this site was approximately 8 standard units (s.u.), while temperature averaged 18.2°C (64.8°F) and dissolved oxygen averaged 16.75 mg/L. The temperature and dissolved oxygen averages suggest that the stream at this site is supersaturated with oxygen. Although the time of day was not recorded, it is assumed that these readings were taken in the afternoon. Macroinvertebrates surveys found the most abundant and diverse collection of macroinvertebrates upstream of Moundview Park. Midge were the most commonly found macroinvertebrate outside of Moundview Park while mayfly were the most common near the rock quarry and the University Park. Based upon his observations and use of the biotic index which calculates stream quality based upon the number and type of macroinvertebrates found in the

stream, the intern from Trout Unlimited determined Rountree Branch's water quality to be of fair quality (8).

1999 – Winter Data Collected by Students from St. Mary School in Platteville

During the winter of 1999, fifth and sixth grade students from Denise Olson's class at St. Mary School in Platteville conducted water monitoring on Rountree Branch near the Swiss Valley Cheese Factory. Monitoring was conducted once in October and once in November. The students observed an average water temperature of 9.2°C (48.6°F), and a pH of 8.2 s.u. The bottom substrate appeared to be predominantly soft sand, mud or clay. The class also observed a variety of macro-and micro-invertebrates (16). The class plans to continue annual monitoring efforts.

2000 – Summer Data Collected by Max Anderson and UW-Platteville Students

Max Anderson, Professor of Civil and Environmental Engineering, and two student interns have been collecting weekly samples since June 1, 2000. They are looking at three parameters; dissolved oxygen, alkalinity, and total suspended solids (TSS). The water samples have found high levels of dissolved oxygen and high alkalinity. High alkalinity can increase the ability of the stream to neutralize acids that enter Rountree Branch. The water samples have found high levels of suspended solids. Suspended solids often come from streambank erosion and stormwater and construction site runoff. Suspended solids can settle to the bottom, forming deposits that cover bottom organisms and fish spawning habitat (42).

2000 – Summer Baseline Data Collected by the Wisconsin DNR

The State DNR began baseline monitoring on Rountree Branch during the summer of 2000. The Wisconsin DNR is developing baseline to track and monitor the changes in water quality and habitat in Rountree Branch. This baseline monitoring will include a fish survey (fish IBI), a macroinvertebrate sample (HBI), a habitat assessment including substrate and canopy cover, measurement of metal concentrations (Pb, Zn, Cu, Cd Ni), as well as temperature, pH, BOD, suspended solids, nutrients, chloride and dissolved oxygen data. Fish IBI's and macroinvertebrate HBI's are measures of stream quality based upon the number and type of fish and macroinvertebrates present in the stream at the time of the survey.

Results of Summer Baseline Data

This baseline data was collected from four stations along Rountree Branch (24). Station 1 was located upstream of Rountree Branch's confluence with the Little Platte River, Station 2 was near the University Park, Station 3 was just upstream of the Highway 80/81 bridge, and Station 4 was just downstream from Moundview Park at Mitchell Hollow Road (See Map 4). Fish IBI results determined Rountree Branch to be fair at Station 1 and Station 4, but poor to very poor at Stations 2 and 3. Habitat surveys conducted during the summer found habitat for trout and smallmouth bass to be from good to excellent in some areas. Substrate in Rountree Branch consists predominantly of slab bedrock, boulders, cobble, gravel and sand. Deep pools are available for protection and riffles for spawning are also present (43). Canopy cover along the stream is typically around 70%. Macroinvertebrate samples have been collected, but have yet to be analyzed. Conductivity in Rountree Branch is twice as high as normal levels. Baseline monitoring found fairly high levels of zinc, however, due to high water hardness, these levels do not pose a great problem to the stream. (24, 46, 51).

Many of the stations surveyed in 2000 reflected stations where previous fish surveying has taken place. Through comparison of the results from various years of monitoring, differences in the fish population were apparent (24, 26). Assuming that the Stations surveyed in the year 2000 were the same as those surveyed in 1908, 1927, 1962, 1977, 1978, 1982, 1985 and 1991, the results of the 2000 survey are as follows: (For a list of fish survey results, see Appendix B) (26).

- Site 1 compared to June of 1978

In June of 1978, the fish survey found a variety of species that were missing from the survey completed in July of 2000. These species include the southern redbelly dace, bluntnose minnow, fathead minnow,

johnny darter, sand shiner, rosyface shiner, and ozark minnow. The only species present in the 2000 survey not found in the 1978 survey is the green sunfish. In addition, only six smallmouth bass were found in this segment of the stream.

- Site 2 compared to 1976 and 1985

In 1976, a survey at this site found many fish species, including bigmouth shiner, stonecat and smallmouth bass. Although these species were missing from the 1985 survey, this survey did find green sunfish and fantail darters. In the 2000 baseline survey, the bluntnose minnow, found in 1976 and 1985, was not found during the survey. During the 2000 survey the stonecat reappeared and the johnny darter was present.

- Site 3 compared to 1927 and 1962 data

The fathead minnow, present in 1927 was missing from 1962 data. The 1962 survey did find a variety of new species including hornyhead chub, bluntnose minnow, blacknose dace, johnny darter, white sucker, brook stickleback, and fantail darter. In the 2000 survey, bigmouth shiner, suckermouth shiner (both found in 1927 and 1962) and bluntnose minnow (1962) were not present in the surveyed stream section. The 2000 survey did find brown trout and green sunfish, both new species in this segment of the stream.

- Site 4

Site 4 was a newly surveyed portion of Rountree Branch, therefore no pre-existing data was available for comparison. The survey completed in 2000 found four young of the year brown trout at this station.

Overall, the trends shown in the fish surveying records indicate that very few smallmouth bass are present in a stream that is considered a nursery stream for this species. The most prevalent fish species in Rountree Branch appear to be the hornyhead chub, common shiner, green sunfish, white sucker, stoneroller (central), creek chub, blacknose dace, johnny darter, fantail darter, and longnose dace. Other species found during the baseline survey include stonecat, smallmouth bass, southern redbelly dace, stickle back and brown trout.

2000 – Late Summer and Fall Fecal Coliform and Fecal Streptococcus Samples

There is a concern over the concentration of fecal coliform and fecal streptococcus in Rountree Branch after rainstorm events. Samples have been taken from five locations along Rountree Branch; Mitchell Hollow Road, Mineral Street, Highway 80/81 bridge, the University Park and the confluence with the Little Platte River. The samples were collected on August 17 and again on September 13, 2000 after rainfall events. Reports from the State Lab of Hygiene found unusually high levels of fecal coliform and streptococcus. Levels of fecal coliform at these stations ranged from in the hundred thousands to the millions. Fecal streptococcus levels during the fall sample were in the millions throughout most of the stream (34, 40). These levels are extremely high and extended follow-up sampling should be done to determine the source of high fecal coliform and streptococcus concentrations.

2000 – Cold Water Habitat Evaluation

Monitoring was conducted by the DNR to identify resource potential and threats to the stream to assist in the resource planning efforts of the community, FORB, and DNR. One of the goals of the monitoring was to determine if the stream was still affected by mine waste piles and metals toxicity. The study found that in general, although the stream had high zinc concentrations, these concentrations did not have a significant effect on fathead minnows, Ceriodaphnia and other aquatic life. Despite this, however, the study found that metals toxicity increased significantly with a heavy rainfall of 2 inches or more. The runoff from rainfall lowers hardness values, which increases the toxicity of most heavy metals. During a significant runoff event, the concentrations of zinc, lead and copper in Rountree Branch became acutely and/or chronically toxic based on NR 105 criteria (52).

Plans for Future Monitoring

Although there has been much monitoring and sampling on Rountree Branch, the efforts have lacked coordination and consistency. The result of this has been the inability to use the data to make accurate

assessments of the water quality of Rountree Branch. This fall, the groups that have been and plan to continue to actively monitor Rountree Branch met to discuss the best way to coordinate their efforts. One of the decisions of the group was to identify four common sites as sites for future monitoring efforts. These sites are located at Mitchell Hollow Road (Site RN00), Mineral Street (Site RN01), at the Highway 80 bridge behind the motel (Site RN02), at the University of Wisconsin-Platteville park (Site RN03), and at the mouth of Rountree Branch (Site RN04) (See Map 5). Several university classes, and the DNR will monitor varying parameters at these four sites. Through this coordination of their efforts, the groups hope to gather a consistent set of data that will give a more complete picture of the health of Rountree Branch (41).

The Wisconsin DNR

The state will be gathering data for baseline monitoring every five years. In addition, the state will monitor Rountree Branch for the following once a month during rainfall events:

- | | | |
|---|-------------|---|
| ▪ Biological Oxygen Demand (BOD) | ▪ pH | ▪ Alkalinity |
| ▪ Total Suspended Solids (TSS) | ▪ Chlorides | ▪ Metals (Cd, Cu, Ni, Pb, Zn) |
| ▪ Nutrients (P, NH ₃ , NO ₂ -NO ₃ , TKN) | ▪ Hardness | ▪ Bacteria (Fecal coliform and streptococcus) |

University of Wisconsin-Platteville

University Professor Max Anderson with help from students has been sampling for the following since June, 2000. They will continue their weekly sampling for the following:

- | | | |
|--------------------------|--------------------|-------------------|
| ▪ Total Suspended Solids | ▪ Dissolved oxygen | ▪ Fecal coliforms |
| ▪ Alkalinity | ▪ pH | ▪ Stream flow |

University Professor Steve Steiner and his Environmental Chemistry class will continue sampling that began in the fall of 1999. They will conduct weekly monitoring for the following:

- | | | |
|--------------------|----------------|-----------------|
| ▪ Dissolved Oxygen | ▪ Conductivity | ▪ Turbidity |
| ▪ Temperature | ▪ pH | ▪ Hardness ions |

Friends of Rountree Branch (FORB)

FORB is a citizen group that formed to rehabilitate and restore the Rountree Branch. The group has received some grant money from the DNR in order to develop a plan of action. FORB hopes to receive further grant funding to conduct some stream monitoring as well as an assessment of the physical and biological habitat of Rountree Branch. The group is looking to monitor the following:

- | | | |
|----------------|--------------------|--------------|
| ▪ Temperature | ▪ Dissolved oxygen | ▪ Alkalinity |
| ▪ pH | ▪ Nutrients | ▪ Bacteria |
| ▪ Heavy metals | | |

Through the coordination and compilation of the monitoring efforts of these groups, it will be easier to assess the water quality in Rountree Branch. Unfortunately, despite these monitoring efforts, little daily flow data will be collected. Currently, the lack of this daily flow data leaves a hole in the information regarding Rountree Branch. Since the addition of daily flows to the above data would contribute to a more complete picture of Rountree Branch, the DNR, the University of Wisconsin-Platteville, the City of Platteville and the United States Geologic Service are hoping to construct a stream gaging station on the stream. The station will gather stream flow measurements and the analysis of non-point pollution from agricultural and stormwater runoff flows and collect water chemistry data.

Map 4 - Baseline

Map 5 – Current monitoring sites

In-Stream and Streambank Habitat Improvements

Engineering students at the University of Wisconsin-Platteville designed and installed stream rehabilitation devices in the fall of 1976 (27). The goal of the students was to create a habitat demonstration project that would showcase stream habitat improvement structures. The students hoped that their efforts would improve the condition of the stream and the streambanks while simultaneously increasing public interest in the condition of Rountree Branch and helping to improve the smallmouth bass fishery.

The project involved installing single wing deflectors, rock V deflectors and both single and double digger logs upstream and downstream of Southwest Road. Through the installation of these devices, the students hoped to give the stream a natural flow while creating pools and scouring and cleaning existing pools. In addition, these deflectors and digger logs may help to add oxygen to the water. The students also planted 200 trees along the streambank to help stop streambank erosion while providing an effective canopy over the stream (27, 28). These structures are still present in the stream today, but are located south of the range of brown trout in Rountree Branch.

In the early 1980's, Engineering students at the University of Wisconsin-Platteville designed and installed riprap along several stretches of Rountree Branch where the banks were eroding. In 1985, students at Platteville High School conducted a habitat development project in a stretch of water just above CTH "B" in the City of Platteville. These improvements have since been washed away as a result of flood waters (2). Critical sites for future streambank protection should be identified.

Stream and streambank clean-ups are popular volunteer activities for a variety of athletic teams and other organizations. Every year, the Sigma Phi Epsilon Fraternity volunteers their time and energy to either clean up the stream or riprap along its eroded banks.

FORB, (FORB), received grant money to coordinate efforts and develop a plan of action for the monitoring and improvement of Rountree Branch and the surrounding watershed. The group is hoping to apply for future grants to help with restoration work in the watershed.

The City of Platteville, in cooperation with FORB, are examining the possibility of purchasing land along Rountree Branch. This land would be used to extend the present trail to the Pecatonica State Trail. The purchase of this land would increase public access along Rountree Branch.

POTENTIAL THREATS TO SURFACE WATER QUALITY

Due to Rountree Branch's location in the driftless region, the watershed's steep slopes increase the potential for excessive sediment delivery to the stream. In addition, Rountree Branch's proximity to the City of Platteville and a high proportion of impervious areas, storm events and snowmelt can cause a more extreme peak flow and create "flashy" conditions. Flashy conditions can contribute to increased levels of streambank erosion. Streambank erosion can widen stream channels, decrease stream velocity and increase stream temperature, which will result in lower levels of dissolved oxygen. This streambank erosion combined with cropland erosion contributes to significant pollution problems including sedimentation and the inflow of nutrients. Municipal discharges from the wastewater treatment plant and stormsewers, in addition to industrial and construction activities within the city are other sources of point and non-point pollution. Rountree Branch is also threatened by high bacterial counts as well as metals toxicity that is a result of runoff from mining waste and roaster piles left over from abandoned mines. All of these sources of non-point and point source pollution will ultimately change the nature of the aquatic habitat in Rountree Branch.

Non-Point Source Pollution

Urbanization and Stormwater

Urbanization and development are major sources of non-point source pollution and can have a severe impact on Rountree Branch. Platteville is the largest municipality in the Grant-Platte River basin with an estimated 1999 population of 10,030. Overall, the population growth rates for all the municipalities and the counties in this river basin are very low (7). Despite this slow rate of development, Platteville generates stormwater and sediment from its impervious areas and construction sites which affect instream water quality, habitat, and fisheries (6).

A couple of proposed development projects in the Rountree Branch watershed have the potential to add to Rountree Branch's non-point source pollution. A major reconstruction of US Highway 151 from Dickeyville to Belmont is scheduled to begin in the year 2002. Sediment coming from the highway construction could threaten instream habitat and the fishery of Rountree Branch if Platteville's Construction Site Erosion Control Ordinance is not followed. Because of the topography of the area such measures may need to go beyond the standard Wisconsin Department of Transportation measures. In addition, the development of an industrial park south of Highway 151 is proposed. These two developments, along with future residential development, could contribute large volumes of construction site erosion and runoff to Rountree Branch.

Stormwater flows from the streets, roofs and parking lots directly into the stormwater sewer system. These sewers empty directly into Rountree Branch and can contribute pollutants and sediments to the stream. Through the development of a stormwater management plan for the City of Platteville, it would be possible for the city to reduce the amount of stormwater and non-point source pollution that flows into Rountree Branch. In addition, by 2003, the City of Platteville may be required to receive a Phase II WPDES stormwater permit for stormwater discharges to Rountree Branch. This requirement is a part of the Environmental Protection Agency's Phase II Stormwater Regulations. Platteville would qualify for coverage under the new EPA Phase II Stormwater Regulations under the "Evaluated Designation" category which states that a municipality with a population over 10,000 may be required to receive a permit to discharge stormwater to a surface water (48).

Another option to help Rountree Branch is through the development of a sewer service area plan (SSA). Sewer Service Area plans are required by administrative code NR 121 for communities of 10,000 people or more. A sewer service area plan identifies where development will most likely occur within the next 20 years and also identifies "environmentally sensitive" areas that need to be protected from development. "Environmentally sensitive" areas include but are not limited to wetlands, floodplains, shorelines, steep slopes, recharge areas, historically or archaeologically significant sites, and critical habitat for rare or endangered species. Through the planning process, the city would develop a plan to provide for cost-effective and environmentally sound sewerage system growth. Ultimately, through the identification of these "environmentally sensitive areas," water quality would be protected and the threat of a future increase in non-point source pollution would be diminished.

In addition, Platteville may also be required to complete a sanitary sewer evaluation survey (SSES). The SSES would provide for a thorough study of the sanitary sewer system to eliminate or reduce sewer system overflows or bypasses during wet weather periods to Rountree Branch. It also would look for any cross-connections between the sanitary sewers and storm sewers (40).

Agriculture and Forestry

Agricultural non-point source pollution from cropland and streambank erosion, and barnyard runoff carry excess sediment, nutrients, pesticides and herbicides to the waters of Rountree Branch. Although this watershed is not within an atrazine prohibition area, these other sources of non-point pollution can also cause groundwater contamination, especially where private wells exist (15). Stream channelization for agricultural or other purposes increases the flow of the stream and causes streambank scouring and

erosion that increases siltation farther downstream. In addition, poor woodlot management can also contribute a large volume of sediment to the stream.

Although there are no large permitted farms in this watershed (farms with over one thousand animal units), one notice of discharge (NOD) has been issued to a farm within the watershed as a result of its discharge of barnyard runoff to Rountree Branch. In issuing an NOD, the Department responds to complaints submitted by the public. Department staff works with the state Department of Agriculture, Trade and Consumer Protection (DATCP) and the counties in completing the investigation and determining whether a significant water quality impact exists. If such a problem exists, the Department issues a "notice of discharge" to the owner, requiring action to alleviate the animal waste discharge. The program has been particularly important because of the regulatory ability to issue permits to those refusing to respond to the notice of discharge.

Non-point pollution has a significant effect on the aquatic habitat in the stream. Siltation and eutrophication affect the temperature, flow and dissolved oxygen level in the stream. In fact, the swings in bass populations seem to be linked to major storm and runoff events that carry much of this non-point pollution to the stream. Such major events often result in significant declines in dissolved oxygen and can result in a fish kill. There are a variety of best management practices that, once implemented, can reduce non-point source pollution and have a positive impact on stream health. The use of rotational grazing, riparian buffers, minimum tillage, in addition to putting and keeping cropland in CRP, should reduce sediment and nutrient loading, and flood peaks. Ultimately, these practices will improve the quality of the stream and should aid in the continued restoration of the smallmouth bass fishery in southwestern Wisconsin. (7).

Abandoned Mines and Heavy Metals

A major water quality problem, unique to this area of the state, is the effect of mining wastes on stream water quality. Two of the largest mines in the region were the Homestead and Empire Mining properties. These mining operations left behind "roaster piles" which were comprised of iron sulfide, a waste of ore processing. These piles are extremely acidic as a result of the creation of sulfuric acid through the reaction that takes place between the iron sulfides and oxygen and precipitation (32). The acidic soils cannot establish adequate vegetative cover and are susceptible to erosion. The runoff from the piles can cause streams to run yellow, gray and red. The Homestead mine shaft and lead roaster pile was located west of the stream in the property that is now Moundview Park. Although the roaster pile has been remediated through the construction of an earthen cap in 1997, engineered by students at the University of Wisconsin-Platteville, and now is covered by a more stable prairie vegetation, some of the evidence of leaching from the pile can be seen where reddish groundwater seeps enter the stream. The former Empire mine and associated roaster pile is located near the DNR Pecatonica trail was also capped in the mid 1990's as an effort at remediation.

One of the main threats of mine waste piles is the potential to add heavy metals to streams. Elevated zinc levels in the water column were detected during monitoring done in 1996 at one location on the stream (7). In addition, the State Laboratory of Hygiene biomonitoring tests, conducted in 1998, showed that water samples taken from Rountree were chronically toxic to *Ceriodaphnia dubia*, a small aquatic organism (water flea). The State Lab of Hygiene report determined metals to be the most likely source of the toxicity. Metals toxicity is most likely a problem after a rain or storm event due to the possible leaching of mine wastes into the surface water (14).

Sampling conducted by the DNR in May, 2000 found that after a rainfall of 2 inches or more, the concentrations of zinc, lead and copper increase while hardness values decrease. Lower hardness in the water increases the toxicity of these metals. After a heavy runoff event, levels of zinc, lead and copper in the stream were found to be acutely and chronically toxic to aquatic organisms in Rountree Branch (52).

In addition to mining waste piles, there are also an unknown number of mine air shafts in the watershed. Mine air shafts are small holes drilled into the ground. Due to their size, these holes are difficult to find

and often are not covered. As a result, these holes may enable pesticides, fertilizers and other pollutants to get into the groundwater. Despite the potential for contamination from these holes, it is not known what effect, if any, these mines and air shafts are having on groundwater or surface water quality (6).

Further monitoring for heavy metals, specifically lead, zinc, iron, cadmium, dissolved solids, and pH, in the stream bottom sediments, water column, and fish tissue from Rountree Branch should be conducted. These results could determine the adverse impacts on water quality, aquatic life or habitat from abandoned mines drainage and runoff from abandoned mine waste piles (1).

Point Source Permits

Swiss Valley Farms

The Swiss Valley Farms cheese factory has historically discharged its wastewater to Rountree Branch. At the time of this discharge, the wastewater contributed nutrients to the stream. The factory, however, has not discharged to Rountree Branch in many years. Instead, the factory has been discharging to the sanitary sewer system. The City of Platteville wastewater treatment plant then treats the wastewater and discharges it into Rountree Branch further downstream.

Recently, Swiss Valley Farms has been considering the possibility of discharging 20,000 gallons/day (gpd) of non-contact cooling water and 13,000 gpd of permeate water from whey directly to the stream. The factory would use a reverse osmosis (RO) method for treatment. This method requires the employment of a high-pressured membrane filtration process to concentrate and separate whey solids. The factory could then sell the concentrated whey. The RO permeate, or the liquid left over from the RO process would be discharged to Rountree Branch. If functioning correctly, RO should keep the discharge below the limits specified by the Wisconsin Pollutant Discharge Elimination System (WPDES) permit issued to the factory by the Wisconsin DNR (30).

The five-year permit was issued in March 30, 1999 (30). Before issuing the permit, the DNR determined the water quality based limits for the factories proposed discharge to Rountree Branch based upon its classification as a Warm Water Sport Fishery (WWSF) (6). The permit specifies the limitations on biological oxygen demand (BOD), temperature, phosphorus and other parameters. The plant, if it decides to discharge, must maintain a discharge temperature of no more than 89°F in the summer and 75°F in the winter. The factory must also adhere to strict levels of BOD5 and Total Suspended Solids (TSS) in order to prevent the significant lowering of water quality and the pH of the effluent must stay between 6 and 9 s.u. (31). This discharge is projected to cause the stream temperature to rise from 73 degrees by 0.83°F (estimate based on July, 1995 data) and to lower dissolved oxygen levels in the stream by 0.23 mg/L (5). If they decide to discharge to Rountree Branch, the factory will be required to monitor the chemical and biological properties of their treated wastewater. The factory will be required to comply with weekly limits and to send samples to a state certified lab. The factory will also be responsible for submitting monthly reports to the DNR. It is also recommended that the factory conduct whole effluent toxicity testing during the permit term.

The FORB conducted a survey in which citizens were asked to voice their concerns in regard to the discharge from the cheese plant. Limited responses showed that the biggest concern was to protect the cold-water resource and maintain the stream's water quality, while allowing the factory to stay in business. Swiss Valley Farms is also concerned about what they can do to protect Rountree Branch. They are considering establishing a buffer along Rountree Branch as it flows past the Swiss Valley Farms cheese plant. Planting a 15 to 30 ft wide buffer on each side of stream, mown to a 6 inch height once or twice a year, burned annually or biannually could have positive benefits for Rountree Branch (4). Other suggestions have been made to help to attain these two goals simultaneously. It has been suggested that the conversion of a small ice pond to a wetland could serve to cool and further filter out the discharge before it enters Rountree Branch. It has also been suggested that the factory examine ways to further

oxygenate the water before discharging to Rountree Branch (30). These alternatives should be examined to determine feasibility.

Municipal Discharges

GCA Evergreen Village, Inc. is located on the western edge of Lafayette County approximately $\frac{3}{4}$ miles east of the city of Platteville. Evergreen has a wastewater treatment facility which went on line in 1990. The treatment plant has the capability to serve 230 people and in 1991, the park had 95 mobile home sites (1). The WWTP has a WPDES permit to discharge to Rountree Branch. Types of treatment conducted by this plant include activated sludge, post aeration, disinfection (ultra-violet in 1991). The flow averages 7,000 gallons per day and the stream $Q_{7\ 10}$ is 0.12 cfs. Connecting this plant to the Platteville sanitary sewer system may be considered in the future.

Platteville is the largest city in the Grant-Platte River Basin and in Grant County. The city's generally well-run WWTP also holds a WPDES permit to discharge to Rountree Branch. As a major WPDES permittee (over 1 million gallons/day), the plant is required to do priority pollutant scan and biomonitoring as a part of its WPDES permit conditions. The priority pollutant scan requires that the plant conduct tests for 120 different pollutants including various metals and organics. Treatment includes bio towers, activated sludge, clarification, sand filters, disinfection (chlorine), dechlorination and post aeration. The plant recently has employed the use of ferric chloride to treat and remove phosphorus from the wastewater. The design flow is roughly 2.050 mgd, and the stream $Q_{7\ 10}$ is 0.90 cfs. The treatment plant is permitted a summer weekly average BOD and TSS of 15 mg/l each. Winter levels are 30 mg/l. Ammonia-nitrogen levels are set at 2 mg/l during summer months and 3.5 mg/l during winter months (14, 19).

Rountree Branch connects with the Little Platte River less than two miles from the Platteville WWTP. A water quality monitoring station on the Little Platte just downstream from where Rountree joins it, showed the Little Platte to have consistently recorded the highest low flow total phosphorus levels of any of the monitoring stations which are a part of the smallmouth bass study. Dissolved oxygen data from this same station in 1989 also showed this station to have large diurnal dissolved oxygen swings with minimum dissolved oxygen values falling below water quality standards (49).

THREATS TO GROUNDWATER AND DRINKING WATER RESOURCES

Grant County is underlain mostly by sandstone and limestone and the water is typically very hard (29). Sulfide minerals are present in the bedrock. These minerals are generally not soluble in the groundwater of this region (45). A qualitative evaluation of the state groundwater contamination susceptibility maps indicates that seven watersheds in the Grant-Platte river basin have a moderate susceptibility to groundwater contamination (1). Iron concentrations in the county's water can be an aesthetic problem (18).

Water for the City of Platteville is supplied by groundwater pumped with three municipal wells. In 1999, these wells pumped 321,369,000 gallons of water (51). Potential contaminants to these municipal wells include a fertilizer and pesticide storage/mixing facility, road salt storage, petroleum/chemical storage, gas service station, scrapyard, fuel storage tank, a leaking underground storage tank and a sewer line. The municipal wells currently do not have a delineated wellhead protection zone, however, they must carry out vulnerability assessments within a 1,200 foot radius of the wells (17). These assessments are used to determine what sampling requirements must be met based upon what contaminants are located inside that circle.

Private water wells in the Rountree Branch watershed also use groundwater. Ambient levels of zinc in groundwater have been found locally to exceed the standard set by EPA (5.0 ppm), but even where such levels are exceeded, there is little reason for concern as the zinc standard set by the EPA is not related to health, but to aesthetic values of the groundwater, principally taste. The general zinc concentration level in ambient groundwater in SW Wisconsin is in the 2 to 3 ppm range (12). The most prevalent problem in

private groundwater wells is from nitrates. High levels of nitrates in private wells is common throughout southern Wisconsin and often 1 in 5 wells have nitrate levels greater than 10 mg/L which is the acceptable level as set by the Environmental Protection Agency (45). The best way to be sure of the health of the water in a private well is to conduct a yearly screening.

LAND AND WILDLIFE RESOURCES

Public Land and Recreational Opportunities

City Parks

The City of Platteville has a variety of parks. Three of these parks are located adjacent to Rountree Branch (22).

- The 25.8 acre Moundview Park is located at the northeast end of Platteville. Rountree Branch runs past Moundview Park. The park has a short walking trail and a shelter and picnic facilities. There are 8 camping sites at the park. The sites have electrical hook-ups and showers are available. Reservations for trailer/tent camping in Mound View Park can be made on site from June to August or at the Police Department main desk. Fees are \$18 for trailer camping and \$14 for tent camping. Call 608-348-2313 for more information.
- Harrison Park, 3.9 acres, is located near Rountree Branch and offers opportunities for softball, picnicking and sledding.
- Valley View Park is 2.3 acres and located southeast of Southwest Road along Rountree Branch has softball facilities, a tennis court, shelter, picnic areas and basketball court.

State Land

There is very little state owned land in the Rountree Branch watershed. The State leases the Pecatonica Trail to the Tri-County Trails Commission. The 10-mile trail currently connects Calamine to Belmont. The surfaced trail is heavily used by horses and ATV's. The Department is identifying critical areas needed to complete the trail segment from Belmont to Platteville as opportunities arise.

University Land

The University of Wisconsin-Platteville campus is close to Rountree Branch. The University has established a park upstream from the wastewater treatment plant and downstream from the main campus. This park is adjacent to Rountree Branch and is a popular recreational spot.

Camping

Camping is available at Moundview Park. See park description above. With the proposed future development of the Pecatonica Trail, the trail can serve to link other campgrounds in the area.

Trails

There are three trails in and around this watershed.

- The Pecatonica Trail – see description above
- The FORB and the University of Wisconsin-Platteville are building a walking/biking trail. Currently, the trail follows along Rountree Branch from the University Campus to Chestnut Road. FORB and the City of Platteville hope to purchase some land in order to extend the trail and connect it with the Pecatonica State Trail.
- The city's Moundview Park has a short walking trail.

Forestry in the Watershed

Students from the University of Wisconsin-Platteville planted roughly 200 trees in the mid-1980's as a part of a stream habitat project. Currently, there are no forestry programs in Platteville or the Rountree Branch Watershed. The largest stretches of trees are located along the Rountree Branch.

Hunting

As a result of the lack of public land in the Rountree Branch watershed as well as its urban setting, opportunities for hunting are limited. Hunting opportunities might be available on private lands and permission must be given by the landowner to hunt on this land.

Boating

Although Rountree is considered navigable waters by the definition of navigability, it is not a good stream for recreational boating.

Fishing

Fishing on Rountree Branch has always been an important recreational opportunity and one that many hope to improve. The FORB are working to purchase fishing easements along the stream in order to increase access to the stream for anglers and make the stream even more accessible for recreation.

Wildlife Management

The Southwest Uplands region of Wisconsin, in which the Grant-Platte basin lies is considered to have the best overall habitat for upland grassland bird species in the state (1). Grant County is located in the Priority II area of the Great Lakes Region Joint Venture program. Due to the limited number of wetlands and quality breeding grounds, there is very little waterfowl nesting possibilities (37). Despite the lack of waterfowl in this area, many non-game grassland birds are present in the Southwestern part of Wisconsin. Grant, Iowa and Dane Counties are a part of the Military Ridge Prairie, which was one of the major prairies in this area. There are many species of management concern in this region: Henslow's sparrow, Loggerhead shrike, Lark sparrow, Grasshopper sparrow, Eastern meadowlark, Field sparrow, Upland sandpiper, Western meadowlark, Bell's vireo, Short-eared owl, Dickcissel, Northern harrier, Bobolink, Blue-winged teal, Greater prairie-chicken, Clay-colored sparrow (north), Brewer's blackbird (north) Savannah sparrow, Barn owl (35). Although pheasant are not native to the state, the bird has been introduced and is now a popular game bird. Grant County, although not a part of the major pheasant habitat in the state, is classified as a pheasant management county (36). A pheasant release program is working to release some of the birds in the Grant-Platte River Basin. The watershed is located within two deer management units (73B and 75D). These units help to make population estimates regarding the number of deer in an area. One potential wildlife problem on the stream is beaver. Beaver can build dams that obstruct the flow of water in a stream and make fish passage difficult, if not impossible.

Natural Heritage Inventory

According to the DNR's Natural Heritage Inventory (NHI) which lists threatened and endangered species, the plants, animals and plant community listed in Table 1 are found in or near the Rountree Branch Watershed (11).

Table 1: Plants, Animals and Communities Found on the NHI Survey

<i>Common Name</i>	<i>Scientific Name</i>	<i>Status</i>
Southern Dry Mesic Forest		Community of Concern
Great Indian-plantain	<i>Cacalia muehlenbergii</i>	State Special concern plant
Twinleaf	<i>Jeffersonia Diphylia</i>	State Special concern plant
Lanced-Leaved Buck-thorn	<i>Rhamnus Lanceolata</i> Var <i>Glabrata</i>	State Special concern plant
American Gromwell	<i>Lithospermum Latifolium</i>	State Special concern plant
Limestone Oak Fern	<i>Gymnocarpium Robertianum</i>	State Special concern plant
Marbleseed	<i>Onosmodium Molle</i>	State Special concern plant
Blanchard's Cricket Frog	<i>Acris Crepitans Balnchardi</i>	State Endangered animal
Ozark Minnow (last found in the 1970's)	<i>Notropis Nubilus</i>	State Threatened fish

WHERE DO WE GO FROM HERE?

Now that a lot of information is gathered together in one place, the question arises of how to use this information effectively. This is a question that needs to be addressed by all of the key stakeholders in the Rountree Branch Watershed. Some collaboration has already begun, but more will be needed as the future of the Rountree Branch and its watershed is discussed. Below are a few suggestions, ideas, and key issues to think about as efforts are made to improve and restore Rountree Branch.

Outreach, Education and Information

In order for any future management and restoration of the Rountree Branch to be successful, all efforts must take into consideration the needs and desires of the local residents and stakeholders. Perhaps one of the best ways to get this information is through surveying. After the concerns of local citizens are known, it will then be easier to define the problems, set goals, and develop a plan of action that will help the community reach these goals.

One of the key issues in this whole process is to have an informed and concerned citizenry. A survey may not do much good if local citizens do not know or care about the problem. There are many ways to educate, inform and involve all stakeholders, from local residents and elected officials, to big businesses and municipalities. Some possibilities include a newsletter, a website, or a series of lectures or workshops.

It is up to the residents and the stakeholders to determine what strategy they wish to pursue in order to reach the goals that they have set for their community and the management of their natural resources. The key to success is to have an active and informed group of stakeholders who think in terms of the watershed and have a desire to make their community a better place to live.

APPENDIX A: KEY STAKEHOLDERS

Badger Wetland Specialists

This private company worked on a project with the goal of eventually restoring the Rountree Branch to an environmentally sound condition through an improvement in the fish habitat in the stream as well as the aesthetics of the surrounding area (10, 1).

City of Platteville (Public works)

The activities of urban residents within the City of Platteville impact Rountree Branch. A clean stream and increased recreational opportunities on Rountree Branch may bring additional tourism to the City of Platteville.

Contact:	<i>Howard Crofoot,</i> Director Public Works P.O. Box 780 Platteville, WI 53818-0780 (608) 348-9741x219	<i>David Knetter, Superintendent</i> Wastewater Treatment Plant P.O. Box 780 Platteville, WI 53818 (608) 348-9741x223
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The Friends Of Rountree Branch (FORB)

The Friends of Rountree Branch is an ad hoc Committee of the Park and Recreation Board of the City of Platteville and is comprised of interested citizens dedicated to the improvement of the Rountree Branch for recreational and water resource purposes.

Contact: *David Canny*
P.O. Box 780, 75 N Bonson St.
Platteville, WI 53818
608-348-9741

Grant and Lafayette County Land Conservation Departments (LCD)

The LCD's primary function is to provide conservation planning and technical assistance to landowners, land users, and decision makers of Grant and Lafayette Counties. In addition, the Wisconsin Legislature created an act in 1997 that creates a county land and water resource management planning program. This legislation mandates the creation of Conservation Plans that address the soil and water concerns using various governmental agencies.

Contact:	<i>Barb Thompson, Grant County</i> USDA Ag. Service Center 150 W. Alona Lane Lancaster, WI 53813 (608) 723-6377	<i>Lisa Trumble, Lafayette County</i> USDA Service Center 1845 Center Drive Darlington, WI 53530-9210 (608) 776-3836
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The Grant-Platte/Sugar-Pecatonica Advisory Committee

The advisory committee is made up of a variety of individuals who are concerned about the resources in the Grant-Platte/Sugar-Pecatonica River Basin. The committee recently developed a survey that asked local residents of the river basins, agency employees and other interested groups what they feel is the biggest threat to the basins. These survey results will then be used to work out strategies to improve upon some of these problems.

Natural Resources Conservation Service

The Natural Resources Conservation Service, a part of the USDA, is the federal agency that works with landowners on private lands to conserve natural resources. Nearly three-fourths of the technical assistance provided by the agency goes to helping farmers and ranchers develop conservation systems uniquely suited to their land and individual ways of doing business. The agency also provides assistance

to other private landowners and rural and urban communities to reduce erosion, conserve and protect water, and solve other resource problems.

Contact: *Patricia Leavenworth, State Conservationist*
6515 Watts Rd
Suite 200
Madison, WI 53719
608-276-USDA

The River Alliance

The River Alliance is a statewide non-profit, citizen advocacy organization that strives to protect and restore rivers. Through advocacy and grass roots involvement, they help restore free-flowing rivers, strengthen local grass roots efforts, and advocate for rivers at the state level.

Contact: *Dianne Toledo, Local Group Support Coordinator*
River Alliance of Wisconsin
306 East Wilson Street 2W
Madison, WI 53703

St. Mary's School

Fifth and Sixth Grade students of Denise Olson at St. Mary's school conducted water monitoring activities on Rountree at the Swiss Valley Cheese Factory during October and November of 1999. The students tested for pH, nitrites, nitrates, ammonia, and water temperature. They collected and identified micro and macro-organisms from the area as well. The students plan to conduct annual monitoring efforts.

Southwest Badger RC&D

Southwest Badger RC&D is one of Wisconsin's six RC&D areas. RC&D is one of the USDA's programs that is administered through the NRCS. The goal of RC&D is to develop new opportunities, and partnerships while promoting economic develop and protecting the natural resources our livelihoods depend on.

Contact: *Steve Bertjens*
Southwest Badger RC&D
310 East Main Street
Platteville, WI 53818
(608) 348-3235

Swiss Valley Farms

The Swiss Valley Farms cheese factory is a major stakeholder in the decisions made regarding Rountree Branch and its surrounding watershed. All decisions made regarding Rountree Branch have an effect on this business. Swiss Valley Farms has been involved in the discussions so far and they play a key role in determining the future of the Rountree Branch Watershed.

Township of Platteville

Many of the residents within the Rountree Branch Watershed live within the Town of Platteville. These residents comprise a majority of the rural residents in the watershed. As residents, the land management practices of these residents have can have an impact on the water quality in Rountree Branch.

Contact: *Skip Stone*
Landowner and Chairman of the Town Planning and Zoning Commission
2099 Fountain Bluff Ln.
Platteville, WI 53818
(608) 348-9393

Trout Unlimited

Trout Unlimited's mission is to conserve protect and restore North America's trout and salmon fisheries and their watersheds. Trout Unlimited has contributed to the efforts in Rountree Branch and may be able to offer support for future projects.

Contact: *Harry Nohr Chapter*
Chuck Steudel, Trout Unlimited
1217 CTH QQ
Mineral Point, WI 53565

UW-Extension and the Basin Educator

The basin educator program is funded by the University of Wisconsin-Extension; the Wisconsin DNR and the National Resources Conservation Service (NRCS). The role of the educators is to work with local advisory committees to develop a basin-wide education strategy; coordinate the educational efforts of UW-Extension and other state agencies; and facilitate team building with NRCS and Land Conservation committee work groups and DNR basin partner teams. The basin educator is available to help provide educational resources, meeting facilitation, and special project assistance for environmental projects.

Contact: *Peggy Compton, Basin Educator*
UW Research Farm
7396 State Highway 35 & 81
Lancaster, WI 53813
(608) 723-6243

University of Platteville

Faculty at the University of Wisconsin-Platteville have taken an interest in the Rountree Branch and found ways to not only get involved in what is happening, but also found a way to involve their students in the monitoring efforts on Rountree Branch.

Contact: *Max Anderson, Tom Hunt, Michael Penn, or Steve Steiner*
University of Wisconsin-Platteville
Platteville, WI 53818
Andermax@uwplatt.edu; huntt@uwplatt.edu; mrpenn@uwplatt.edu;
steiners@uwplatt.edu

Wisconsin DNR

The Wisconsin DNR promotes open and collaborative relationships with local groups and individuals interested in the state's natural resources.

Contact: <i>Bob Hansis, Water Basin Leader,</i> <i>Carl Batha, Land Basin Leader or</i> <i>Steve Fix, Water Quality Planner</i> 3911 Fish Hatchery Road Fitchburg, WI 53711 (608) 275-3266	<i>David Marshall, Water Quality Biologist,</i> <i>Bradd Sims, Fisheries Biologist, or</i> <i>Jack Saltes, Watershed Basin Engineer</i> 1500 North Johns Street Dodgeville, WI 53533 (608) 935-3368
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APPENDIX B: FISH SHOCKING RECORDS

<i>Date/Year</i>	<i>Station/Location</i>	<i>Type</i>
6/26/08	03N 01W 14 SW NW	Minnows/carp
		Southern Redbelly Dace
		Fathead Minnow
		White Sucker
		Green Sunfish
8/9/27	03N 01W 22 NW NW	Stoneroller (central)
		Common Shiner
		Bigmouth Shiner
		Suckermouth Shiner
		Creek Chub
		Fathead Minnow
		Southern Redbelly Dace
8/14/62	03N 01W 22 NW NW	Stoneroller (central)
		Hornyhead Chub
		Common Shiner
		Bigmouth Shiner
		Suckermouth Shiner
		Southern Redbelly Dace
		Creek Chub
		Bluntnose Minnow
		Blacknose Dace
		Johnny Darter
		White Sucker
		Brook Stickleback
		Fantail Darter
7/26/76	03N 01W 16 NW SW	Stoneroller (central)
		Hornyhead Chub
		Common Shiner
		Bigmouth Shiner
		Johnny Darter
		Brook stickleback
		Southern Redbelly Dace
		Bluntnose Minnow
		Blacknose Dace
		Longnose Dace
		Creek Chub
		White Sucker
		Stonecat
		Smallmouth Bass
5/31/78	03N 01W 14 NW SW	Stoneroller (central)
		Hornyhead Chub
		Common Shiner
		Southern Redbelly Dace
		Bluntnose Minnow
		Fathead Minnow
		Blacknose Dace
		Creek Chub
		White Sucker
		Stonecat
		Fantail Darter
6/7/78	03N 01W 18 SE NE	Stoneroller (central)

<i>Date/Year</i>	<i>Station/Location</i>	<i>Type</i>
6/7/78 (cont.)		Hornyhead Chub
		Common Shiner
		Bluntnose Minnow
		Fathead Minnow
		Southern Redbelly Dace
		Blacknose Dace
		Creek Chub
		White Sucker
		Longnose Dace
		Johnny Darter
		Fantail Darter
		Sand Shiner
		Rosyface Shiner
		Stonecat
		Ozark Minnow
		Smallmouth Bass
4/23/82	03N 01W 14 NW SW	Stoneroller (central)
		Stonerollers
		Hornyhead Chub
		Common Shiner
		Bigmouth Shiner
		Southern Redbelly Dace
		Bluntnose Minnow
		Fathead Minnow
		Blacknose Dace
		Creek Chub
		White Sucker
		Brook Stickleback
		Johnny Darter
		Fantail Darter
7/18/85	03N 01W 16 NW SW	Green Sunfish
		Southern Redbelly Dace
		Bluntnose Minnow
		Blacknose Dace
		Longnose Dace
		Hornyhead Chub
		Common Shiner
		Creek Chub
		Stoneroller
		Fantail Darter
		White Sucker
5/6/91	03N 01W 16 SW SE	Stoneroller
		Hornyhead Chub
		Common Shiner
		Southern Redbelly Dace
		Bluntnose Minnow
		Green Sunfish
		Blacknose Dace
		Creek Chub
		White Sucker
		Longnose Dace
		Fantail Darter
		Smallmouth Bass
		Brown Trout (stocked)

<i>Date/Year</i>	<i>Station/Location</i>	<i>Type</i>
5/23/00	Site 1: Sewer Plant	Creek Chub
		Hornyhead Chub
		Stoneroller
		Longnose Dace
		Common Shiner
		White Sucker
		Fantail Darter
		Blacknose Dace
		Stonecat
		Southern Redbelly Dace
		Johnny Darter
	Site 2: Park downstream from bridge	Stoneroller (central)
		Common Shiner
		Longnose Dace
		Hornyhead Chub
		Creek Chub
		Southern Redbelly Dace
		Stonecat
		White Sucker
		Fantail Darter
		Bluntnose Minnow
		Johnny Darter
		Brook Stickleback
		Green Sunfish
		Northern Redbelly Dace
		Brown Trout
		Blacknose Dace
	Site 3: 300 yds down from 80/81 bridge	Common Shiner
		Creek Chub
		Southern Redbelly Dace
		Blacknose Dace
		Stoneroller (central)
		White Sucker
		Fantail Darter
		Bluntnose Minnow
		Green Sunfish
		Johnny Darter
		Brown Trout
	Site 4: 151 Bridge	Common Shiner
		Stoneroller (central)
		Blacknose Dace
		Creek Chub
		Southern Redbelly Dace
		White Sucker
		Fantail Darter
		Bluntnose Minnow
		Johnny Darter
		Green Sunfish
		Brown Trout
	Site 5: Mitchell Hollow Rd.	Creek Chub
		Blacknose Dace
		Fantail Darter
		White Sucker
		Johnny Darter

<i>Date/Year</i>	<i>Station/Location</i>	<i>Type</i>
		Fathead Minnow
		Brook Stickleback
		Brown Trout
7/00	Site 1: Upstream of confluence with Little Platte	Fantail darter
		White Sucker
		Creek Chub
		Hornyhead chub
		Common Shiner
		Stoneroller (central)
		Stonecat
		Smallmouth Bass (one)
		Longnose dace
7/00 (cont.)		Blacknose dace
		Green sunfish
	Site 2: University park	Fantail darter
		White Sucker
		Creek Chub
		Hornyhead chub
		Common Shiner
		Stoneroller (central)
		Stonecat
		Longnose Dace
		Blacknose Dace
		Green Sunfish
		Johnny Darter
		Southern Redbelly Dace
	Site 3: 80/81 Bridge	Fantail Darter
		White Sucker
		Creek Chub
		Hornyhead Chub
		Common Shiner
		Stoneroller (central)
		Brook Stickleback
		Brown Trout
		Blacknose Dace
		Green Sunfish
		Johnny Darter
		Southern Redbelly Dace
	Site 4: Mitchell Hollow Road	Fantail Darter
		Brown Trout

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